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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,433	11/27/2001	Donald Ray Bloyer	1834.135US1	9787

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EXAMINER

MILLER, PATRICK L

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

09/995,433

Applicant(s)

BLOYER ET AL.

Examiner

Patrick Miller

Art Unit

2837

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 11 May 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
- (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ They raise the issue of new matter (see NOTE below);
- (c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☒ Applicant's reply has overcome the following rejection(s): 12, 23, and 28.
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
- The status of the claim(s) is (or will be) as follows:
- Claim(s) allowed: 12, 14, 15 and 23-28.
- Claim(s) objected to: 4-10 and 17-22.
- Claim(s) rejected: 1-3, 11, 16 and 29-32.
- Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). \_\_\_\_\_
13. ☒ Other: PTO-892.

  
**MARLON T. FLETCHER**  
**PRIMARY EXAMINER**

Continuation of 11. does NOT place the application in condition for allowance because:

First, the Applicant asserts that because the Examiner indicated that the limitations of claim 13 would be allowable once incorporated into the independent claim 12, inserting this feature into any other independent claim would make them allowable and would not require further searching. This assertion is incorrect. The Final rejection only stated that claim 13 incorporated into claim 12 would be allowable. Furthermore, the "other" independent claims do not contain the same limitations of claim 12.

#### 102 Rejections to Kim (6,493,173)

First, with respect to claim 1, RRO is defined as repeated vibration caused by air flow in the HDD. Because there is a space between the head and disk, this means that air flow between the head and the disk causes RRO. See e.g. Byun et al. (2005/0068661) at [0016]. Therefore, the Kim reference is concerned with negating the effects of RRO, which is due to the air flow between the head and disk. This is interpreted as an interference caused by undesired air-bearing stability in an interface between a head and a surface, as recited in Claim 1. Furthermore, Kim does modulate current due to a predicted occurrence of interference. Specifically, referring to Figure 2B, when the system determines that a portion of the disk needs to be compensated for RRO (an interference), the controller 40 produces a corrected PES signal, sends this signal to the servo compensator 66, and outputs a VCM control signal 42, which modulates current in the VCM to compensate for the predicted RRO interference. See also col. 5, ll. 17-19.

With respect to claim 32, RRO can cause the surface of the disk to contact the read/write head or "crash." See Rahman (2003/0117906) at [0007]. This means that the RRO (interference) that Kim seeks to compensate for can be caused by contact between the head and the disk surface.

#### 102 Rejections to Houston et al. (6,282,046)

The Applicant's arguments are persuasive. First, the Examiner already stated that claim 12 would be allowable once the limitations of claim 13 are added. The Applicant has done this, and the Examiner has removed the rejection. Additionally, though the Examiner did not state that adding the limitations of claim 13 into claim 28 would make claim 28 allowable, the two claims are substantially similar (substantially the same method and apparatus). Therefore, adding the limitations of claim 13 into claim 28 overcomes Houston et al. and does not require a further search. The Examiner has therefore removed the rejection to claim 28.

#### 103 Rejections to Dunn et al. (5,473,230)

With respect to claims 1 and 16, Dunn et al. seeks to compensate for the drag exerted on the spindle motor. See col. 1, ll. 30-31. The drag force results from the air that circulates around the disks. Id. at 32-34. Since the head does not normally touch the disk, air flows between the head and the disk and creates interference. The air between the head and disk produces torque disturbances, which is interpreted as undesired air-bearing stability. To compensate for this undesirable air-bearing instability, Dunn et al. modulates current to the spindle motor. Specifically, referring to Figure 1, drag from circulating air between the head and disk (air-bearing instability) is input to a summer from 20. This produces an error signal which is fed back to the control system and compensated by 11, 12, and 14. The compensated value is then input into the converter 15, which in turn, modulates the current in the motor 18 to correct the effects of the circulating air (air-bearing instability). Additionally, with respect to claim 16, Dunn et al. disclose a performance profile (col. 2, ll. 29-33; the current profile is stored in a lookup table); and dynamic performance is the velocity error. See Figure 1.

With respect to claim 23, the Applicant's arguments are persuasive and the Examiner has withdrawn this rejection.

With respect to claim 29, the Applicant's arguments are not persuasive. The applicant argues that claim 29 is written according to 35 USC 112, sixth paragraph, and that Dunn et al. do not disclose the "means operative on the processor to modulate a current directed to the spindle motor, to reduce interference in an interface between the head and the rotatable recording medium." Looking to the Applicant's specification, the Applicant defines the processor as either 540 from Figure 5 or 1440 from Figure 14. The specification states that this feature can be either a microcomputer or a microprocessor. See Bloyer et al. (2002/0063545) at [0055]. Also from the specification, the Applicant defines the means to modulate current as either 550 in Figure 5 or 1450 from Figure 14. The specification only labels these items as a "current modulating means" and states that the means performs the function recited in the claim language. The Examiner has interpreted the processor of claim 29 to be represented by items 11, 12, 15, 22, 23, and 24. See Dunn et al. at Figure 1. Furthermore, the Examiner has interpreted 14 in Figure 1 as an equivalent of the means in claim 29. For the two to be deemed equivalents, item 14 of Figure 1 must be operative on the processor so that the processor modulates a current directed to the spindle motor, to reduce interference between an interface between the head and the rotatable recording medium. First, 14 (means) sends a signal to the defined microprocessor (Fig. 1, items 11, 12, 15, 22, 23, and 24). This means that 14 is operative on the processor. Second, the feedback loop in the processor determines whether there is an interference in an interface between the head and the rotatable recording medium, where in this case, the interference is caused by drag induced by air flowing between the head and the disk. See Dunn et al. at col. 1, ll. 30-34. Based on this interference, 14 supplies a correction value, which is obtained from a lookup table, and represents the incremental current required to be supplied to the microcontroller to cancel the disturbance or interference. Id. at 18-43. The correction value is then sent to 15 and 17 to modulate current in the spindle motor to cancel the disturbance or interference. Id. In summary, item 14 in Dunn et al. is the equivalent that is capable of the identical function as the means disclosed in claim 29.

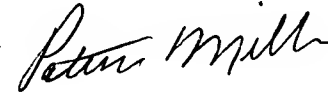
#### 103 Rejections to Boyd et al. (6,741,414)

With respect to claims 1 and 16, Boyd et al. disclose controlling the speed of a spindle motor based on a mechanical disturbance. See col. 11/12/13, ll. 54-67/1-67/1-14. Boyd et al. also disclose viscous drag having an effect on the rotational speed. See col. 12, ll. 54-58. Viscous drag is interpreted by the Examiner as including drag <sup>2</sup> induced by circulating air between the head and the disk. To

overcome the viscous drag, Boyd et al. would have to increase the spindle motor speed by, for instance, increasing current to the motor. However, Boyd et al. do not disclose doing this. The Examiner stated that it would be obvious to modulate current to the spindle motor to overcome the viscous drag, but did not provide documentation. The Examiner should have relied upon Dunn et al. to teach this feature but did not. The Examiner does not believe that this claim is allowable in view of the potential for modifying the Boyd et al. reference with the teachings of Dunn et al. However, since the Examiner did not make this rejection, the Examiner has withdrawn the rejection for claims 1 and 16 to Boyd et al.

With respect to claim 23, the Applicant's arguments are persuasive and the Examiner has withdrawn the rejection to Boyd et al.

With respect to claim 29, the Applicant's arguments are persuasive and the Examiner has withdrawn the rejection to Boyd et al.

A handwritten signature in cursive script, appearing to read "Peter Miller".